

10,03

**PRELIMINARY ASSESSMENT
RAY WICHERT PROPERTY
CLINTON, OKLAHOMA**

*Recd from
Hal Cantwell
11-9-00*

*Removal done to
address Kadium*

July 29, 1992

OKLAHOMA STATE DEPARTMENT OF HEALTH

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I. Introduction

The Oklahoma State Department of Health (OSDH) is tasked by the U.S. Environmental Protection Agency (EPA), as authorized by CERCLA and as amended by SARA, under the Multi-Site Cooperative Agreement (CA# V-00645-01) to conduct a preliminary assessment (PA) of the Ray Wichert Property (CERCLIS ID# not yet assigned). As depicted in Figure 1 (Reference 1), this site is approximately a one mile south of the City of Clinton, Custer County, Oklahoma. The primary purpose for this PA is to assess the immediate or potential threat of wastes at the site that may have an impact on public and environmental health and to collect information sufficient to support a decision regarding the need for further action under CERCLA/SARA. The scope of this investigation includes the review of available information from the OSDH files and conducting a comprehensive target survey.

II. Site Description, Operational History, and Waste Characteristics

Site Description

The Ray Wichert Property is primarily located in the NE4 SEC27 T12N R17W I.M. CUSTER COUNTY OK (Reference 1, 2). The two (2) acre site has the coordinates of 35° 29' 24.38" north latitude and 98° 58' 41.03" west longitude (Reference 2). The site is a little less than one (1) mile south of the City of Clinton. The dump is not active and is currently owned by the Oklahoma Bank and Trust Company of Clinton, Oklahoma. (Reference 3, 4). The Ray Wichert Property had apparently operated as a dump between 1969 to 1987 (Reference 3). The site is in a commercial setting (Reference 3). The nearest residence is approximately one tenth (1/10) of a mile directly west of the site (Reference 1, 3). The nearest active domestic well is approximately two and a half (2 1/2) miles to the northeast of the site (Reference 1).

Operational History

According to the Quit Claim Deed dated 10/12/87 between Ray Wichert, Peggy Jo Wichert, and Wic-Hert Inc., and Oklahoma Bank and Trust Company of Clinton, Oklahoma, the property, approximately 2.0 acres with a fill of 6 to 8 feet deep, is now owned by the Oklahoma Bank and Trust Company (Reference 4). The person who apparently owned the property originally was Earl Smith. Mr. Smith went bankrupt and Ray Wichert acquired the property. Mr. Wichert then too went bankrupt and had to relinquish the land. The property was then finally sold at an auction on August 25, 1987 to the Oklahoma Bank and Trust Company of Clinton Oklahoma. They currently retain ownership of the property (Reference 4).

At the time of construction, the site had been excavated and was apparently around fifteen (15) feet lower than the east boundary which runs parallel to the railroad track (Reference 3). The property has been used "in the past" as a disposal site for concrete, construction, and asphalt in the City of Clinton. The site has presumably been contaminated with radium by rubble left from a airplane dial refurbishing plant called Sooner Dial Co. of Clinton which is

approximately one (1) mile from the site. Sooner Dial Co. used paint containing radium due to its luminous characteristics. Mr. Grubb, the owner of the Sooner Dial Co. property claims that he hired Sugar Creek Transport, owned by Bill Warner, to haul the rubble off, and that it was Warner who chose to take it to the Ray Wichert Property. According to Mr. Grubb, the "rubble site" was owned by Earl Smith, who openly allowed people to dump dirt, etc. The drainage of surface water is to the north toward the intermittent water course. Multiple samples were taken from the site at different times to determine the extent of contamination on the property. In all of the tests, the results conveyed that the levels of contamination were high enough to warrant removal (Reference 4).

On September 24, 1990, the OSDH sent a letter to the Oklahoma Bank and Trust Company informing the bank of its responsibility to remediate the radiation waste on the property they own, referred to as the "Sooner Dial Co. Rubble site". However, Al Wood, Vice-President of Oklahoma Bank and Trust, disagrees with the claim that they are responsible for the cost of an environmental assessment without "something more than speculation" as to possible contamination. However, field data taken in the past shows a concern for levels of radiation on site (Reference 4).

Waste Characteristics

There are multiple sources of concern that need to be identified and remediated. The first source is the radium contamination due to its radioactivity and its toxicity. There were numerous areas that had elevated readings of radioactivity (Reference 5). The rubble is located within an approximate one acre area of the site (Reference 3). The majority of the rubble is assumed to be from the Sooner Dial Co. site (Reference 3).

Radium is a radioactive earth metal that is brilliant white and tarnishes in air. It decomposes in water and has a melting point of 700° Fahrenheit and a boiling point of 1737° Fahrenheit. It is highly dangerous, and must be kept heavily shielded and stored away from possible dissemination by explosion, flood, ect. It is considered to be a common air contaminant and a highly radiotoxic element. Inhalation, ingestion, or bodily exposure to radium can lead to lung cancer, bone cancer, osteitis, skin damage and blood dyscrasias (Reference 5). Radium replaces calcium in the bone structure and is a source of irradiation to the blood forming organs. The ingestion of luminous dial paint prepared from radium was the cause of death of many of the early dial painters before the hazard was fully understood. ^{226}Ra decays to ^{222}Rn via alpha waves and therefore is considered the parent of radon (Reference 5).

The next source of concern are drums that were found on sight. There were six (6) unmarked drums. The majority of the drums were obviously under pressure and had expanded, but at least one of the drums had ruptured and had leaked an unknown substance. Stressed vegetation marked the area where the leaking had occurred (Reference 3). The final source of con-

cern is a removed underground storage tank (UST) that was above ground. It was estimated to be a 5000 gallon tank. It is unknown if the tank ever had or does contain any hazardous materials (Reference 3).

III. Pathway and Environmental Hazard Assessment

Groundwater

The site, at the time of construction, had been lowered apparently fifteen feet as compared to the west embankment and been covered with a layer of clay. The depth of the clay has not been determined. Under this clay is a layer known as the Terrace Deposits. Terrace Deposits are stream-laid deposits of sand, silt, clay, gravel, and volcanic ash. Its thickness ranges from 0 to about 120 feet. Underlying the Terrace Deposits is the Cloud Chief Formation. It is characterized as being a reddish-brown to orange-brown shale, interbedded with siltstone and sandstone in the middle part and some dolomite and much gypsum in the lower part of the formation. Its thickness is around 400 feet, thinning northward to about 175 feet. The Whitehorse Group forms the next underlying layer. The Whitehorse Group is predominantly orange-brown, fine-grained sandstone. The Rush Springs Formation and the Marlow Formation comprise the Whitehorse Group. The Rush Springs Formation ranges in thickness from 300 feet, thinning northward to about 186 feet. The Marlow Formation, although not as thick, ranges from 100 to around 130 feet thick, gradually thinning to the north. This formation has 2 gypsum and (or) dolomite beds in the upper 20 feet of the formation. Two thin, pink shales occur. The first is about 1 foot below the top and the second is about 55 feet above the base. In the middle of the formation about 25 feet below the previously mentioned gypsum layers and about 85 to 95 feet above the base is the Verden Sandstone Lentil. It is a coarse-grained, calcareous, fossiliferous sandstone. (Reference 6)

Aquifers are associated with the Terrace Deposits and the Rush Sandspring Formation, and in the vicinity of the site, they; therefore, will be viewed as one aquifer for the duration of this report. Along large streams, deposits consist of clay and silt at the surface which form the Terrace Deposits. It then grades downward into coarse sand and gravel at the base. Water is available from saturated layers of sand and gravel, and yields are highest where the coarse sand and gravel layers are thickest. In areas where an alluvium or terrace aquifer overlies the Rush Springs Sandstone, water is available from either aquifer. In the vicinity of the site the deposits are thin and yields an average 280 gallons per minute (gpm). The Rush Springs Sandstone consists mainly of fine-grained sandstone with some dolomite, shale, and gypsum beds. The Marlow Formation, which is inclusive with the Rush Springs Formation, consists of fine-grained sandstone with much gypsum and shale. The bedrock aquifer in the vicinity of the site is thick, but is assumed to be relatively close to the surface. In addition, it yields an average of 14 gallons per minute (gpm) at the nearest vicinity of the site (Reference 6).

There are private water wells within the area of interest (Reference 3, 7). Populations served by private wells are described below (References 7). The nearest well used for drinking water is about two and a half (2 1/2) miles to the northeast from the site, serving an estimated population of 2.55 (Reference 3, 7, 8, 9). Based on above information, all groundwater users are considered secondary targets.

Distance from Site (mi)	Estimated Populations Served by Private Wells
On-site	0
0 - 1/4	0
1/4 - 1/2	0
1/2 - 1	0
1 - 2	0
2 - 3	2.6
3 - 4	5.1
Total	7.7

Surface Water

The nearest perennial stream is just greater than two miles away from the site following the surface water migration route. Accordingly, there is not considered to be a probable point of entry (PPE). Although the general vicinity of the site is outside the flood plane, the site itself might actually be within the 500 year flood plane due to its lowered elevation (Reference 3, 10, 11). The normal annual total precipitation in the site's region is about 25 inches per year (Reference 6).

There are no active surface water intakes located within the 15 mile target distance. Due to the excavated nature of the site, it is possible for the site to be in the flood plane and therefore could have the endangered species habitats associated with it. Habitats of the endangered/threatened species listed below are known to be in Custer County, however; it is unknown if any of these habitats are actually associated with the surface water migration route (Reference 12).

<i>Species</i>	<i>Federal Status</i>
Bald eagle	Endangered
Whooping crane	Endangered
Interior least tern	Endangered
Peregrine falcon	Endangered
Arkansas River shiner	Candidate
Arkansas River speckled chub	Candidate
Texas horned lizard	Candidate
White-faced ibis	Candidate
Ferruginous hawk	Candidate
Long-billed curlew	Candidate
Western Snowy plover	Candidate

Soil Exposure

As per the PA Guidance Document, on-site soil contamination is assumed. The site is non-active. There is no one currently working on site (Reference 3). There are no residences, schools, day-care centers within 200 feet or within the site-boundaries (Reference 1, 3, 4). Due to the lack of information, it is assumed (as per the PA Guidance Document) that all of Custer County's terrestrial endangered/threatened species listed under the surface water pathway are on-site (Reference 12).

Air

Due to the composition of the rubble, the heavy vegetation associated with the area, and the excavated landscape, an air release is not suspected. The estimated population and wetland acreage within 4 miles from the site is described below (References 1, 3, 7, 8, 9, 13). There are no "designated" wetlands on-site (Reference 11). As per the PA Guidance Document, it is assumed that the all of Custer County's endangered/threatened species, listed under the surface water pathway, have habitats on site (Reference 12). In addition the prairie mole cricket, which is located in Washita county, could possibly be as near as 1 3/4 miles from the site (Reference 1,12).

Distance from Site (mi)	Estimated Residing Population	Estimated Wetland Acreage
On-site	0	0
0 - 1/4	71.4	1
1/4 - 1/2	63.8	2.5
1/2 - 1	1969	9
1 - 2	3703	40
2 - 3	3124	60
3 - 4	140.3 (Custer) 50.6 (Washita)	75
Total	9122.1	187.5

IV. Summary and Conclusion

An excavated area in Custer County, Oklahoma had operated as a dump site apparently between 1969 to 1987. The site is known to contain rubble contaminated with radioactive radium, six unlabeled drums, and an unearthed underground storage tank; therefore, the surface may be adversely effected. The surface water has a potential for contamination via floods which poses a threat to the environment and to human targets through food chain contamination. The site is inactive and is heavily vegetated; therefore, the likelihood of human exposure via soil and air is probably minimal. Additionally, the groundwater pathway is also of minimal concern because the nearest domestic well is over two miles from the site.

V. Figures

Nearest Well
2 1/2 miles northeast of the site

FIGURE 1: VICINITY MAP

Nearest Residence

Entrance

SITE

July 29, 1992

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Ray Wichert Property



